

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A process for making a composition for conversion to lyocell fiber, said process comprising:

contacting an alkaline pulp comprising cellulose and at least about 7% hemicellulose under alkaline conditions with an amount of an oxidant sufficient to reduce the average degree of polymerization of the cellulose to within the range of from about 200 to about 1100, without substantially reducing the hemicellulose content of the pulp or substantially increasing the copper number.

2. The process of Claim 1 wherein said oxidant comprises at least one member of the group consisting of a chemical with a peroxide group, oxygen, chlorine dioxide, ozone and combinations thereof.

3. The process of Claim 2 wherein the reduction in the average degree of polymerization of the cellulose occurs in the presence of a ratio of magnesium to transition metals of less than about 50%.

4. The process of Claim 1 wherein the hemicellulose content of the pulp is reduced less than about 50%.

5. The process of Claim 4 wherein the hemicellulose content of the pulp is reduced less than about 15%.

6. The process of Claim 4 wherein the hemicellulose content of the pulp is reduced less than about 5%.

7. The process of Claim 1 wherein the copper number increases less than 50%.

8. The process of Claim 1 wherein the copper number increases less than about 25%.

9. The process of Claim 2 wherein the contacting step further comprises contacting the pulp with an alkali source selected from the group consisting of sodium hydroxide, oxidized white liquor, and unoxidized white liquor.

10. The process of Claim 1, wherein the alkaline pulp and oxidant are contacted at a pH greater than about 8.0.

11. The process of Claim 1, wherein the contacting step occurs in the substantial absence of an inhibitor to the degradation of the cellulose by the oxidant.

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